

## Asset Details

- Asset ID: PMP01
- Asset Name: Water treatment pump 1
- Manufacturer: Ebara
- Model: EVMSL64-5\_2-30
- Rated Power: 30 kW
- Rated Voltage: 400 V
- Location: PUB Station Bedok

## Performance Summary

- Data Period: 2025-10-01 to 2025-11-30
- Total Power Consumption: 24.5 MWh
- Daily Average Power Consumption: 401.6 kWh

Power Consumption (energy\_kwh):

- Average: 23.2 kWh
- Minimum: 22.02 kWh
- Maximum: 28.33 kWh
- Standard Deviation: 1.28 kWh
- Trend: flat

Temperature DE:

- Average: 59.03 °C
- Minimum: 55.0 °C
- Maximum: 72.22 °C
- Standard Deviation: 3.53 °C
- Trend: flat

Temperature NDE:

- Average: 59.32 °C
- Minimum: 55.28 °C
- Maximum: 72.58 °C
- Standard Deviation: 3.55 °C
- Trend: flat

Vibration DE:

- Average: 3.89 mm/s RMS
- Minimum: 3.3 mm/s RMS
- Maximum: 5.55 mm/s RMS
- Standard Deviation: 0.46 mm/s RMS
- Trend: flat

Vibration NDE:

- Average: 3.97 mm/s RMS
- Minimum: 3.37 mm/s RMS
- Maximum: 5.66 mm/s RMS
- Standard Deviation: 0.47 mm/s RMS
- Trend: flat

## Operational Status

All monitored signals exhibit flat trends over the monitoring period. Power consumption remains stable with mean 23.2 kWh and low variability (standard deviation 1.28 kWh). Temperature readings at both DE and NDE bearings show stable operation with mean

**values of 59.03 °C and 59.32 °C respectively. Vibration levels at both bearing position values of 3.89 mm/s RMS (DE) and 3.97 mm/s RMS (NDE). Recent data shows vibration 5.55 mm/s RMS (NDE). The asset is operating continuously with no missing data points.**

### **Risk Assessment**

Vibration Analysis (API 610): Average vibration levels of 3.89 mm/s RMS (DE) and 3.97 mm/s RMS (NDE) fall within the Preferred Operating Region (POR: 0.28 to 5.0 mm/s RMS). Maximum recorded vibration of 5.55 mm/s RMS (DE) and 5.66 mm/s RMS (NDE) exceed the POR threshold and enter the Alert - Allowable Operating Region (AOR: 5.0 to 6.5 mm/s RMS). Recent measurements show vibration spikes approaching AOR limits.

Temperature Assessment: Maximum bearing temperatures of 72.22 °C (DE) and 72.58 °C (NDE) are elevated. Recent readings show sustained high temperatures above 70 °C, with peaks at 72.22 °C (DE) and 72.58 °C (NDE).

Power Consumption: Stable consumption pattern with maximum 28.33 kWh remaining below rated capacity of 30 kW.

Overall Risk: Moderate risk due to intermittent vibration excursions into AOR zone and elevated bearing temperatures. Continued monitoring of vibration peaks and thermal conditions is recommended.